

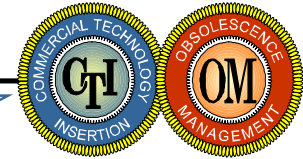


COMMERCIAL COMPONENT USE IN MILITARY SYSTEMS

PARTS OBSOLESCENCE WORKSHOP

Impact of Commercialization on Parts Obsolescence

LOCKHEED MARTIN
Electronics & Missiles, Orlando FL



Affordability Examples



✓ Boeing/Sikorsky Team Approved Use of PEMs

Consistent with DoD Commercial Initiatives
Availability / Weight Savings / DTC

✓ Use of PEMs at LM Alone Trimmed \$37K/System

Additional Opportunities to Trim Cost Exist



✓ MICOM/LM/Westinghouse PEM Plan

Targeted 13 Microcircuits for PEM replacement
Team Surveyed Major Suppliers / Drafted Reliability/Qual Plan

✓ Use of PEMs for Production Save \$3019/Round

\$30M+ Over the Production Life of 10,000 Missiles
Modest \$700K NR Investment Up Front To Qualify PEMs
Total Program ROI 75:1

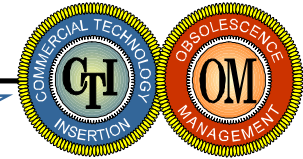


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Supplier Management

✓ Know Your Supplier

Performance History

SPC

Reliability Monitoring

Continuous Improvement

Internal Qualification Procedures

Change Notification System

✓ Supplier Evaluation Team

Engineering

Quality

Reliability

Manufacturing

Procurement

Customer

Review process flow, qualification, and performance data

Insure adequacy of SPC and overall quality program

Review monitoring data and assess system impacts

Insure parts are compatible with existing mfr methods

Review financial status and delivery performance

Validate results of evaluation team

✓ Standardize Evaluation Criteria

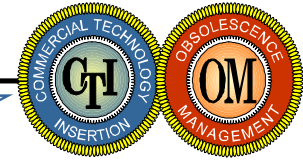


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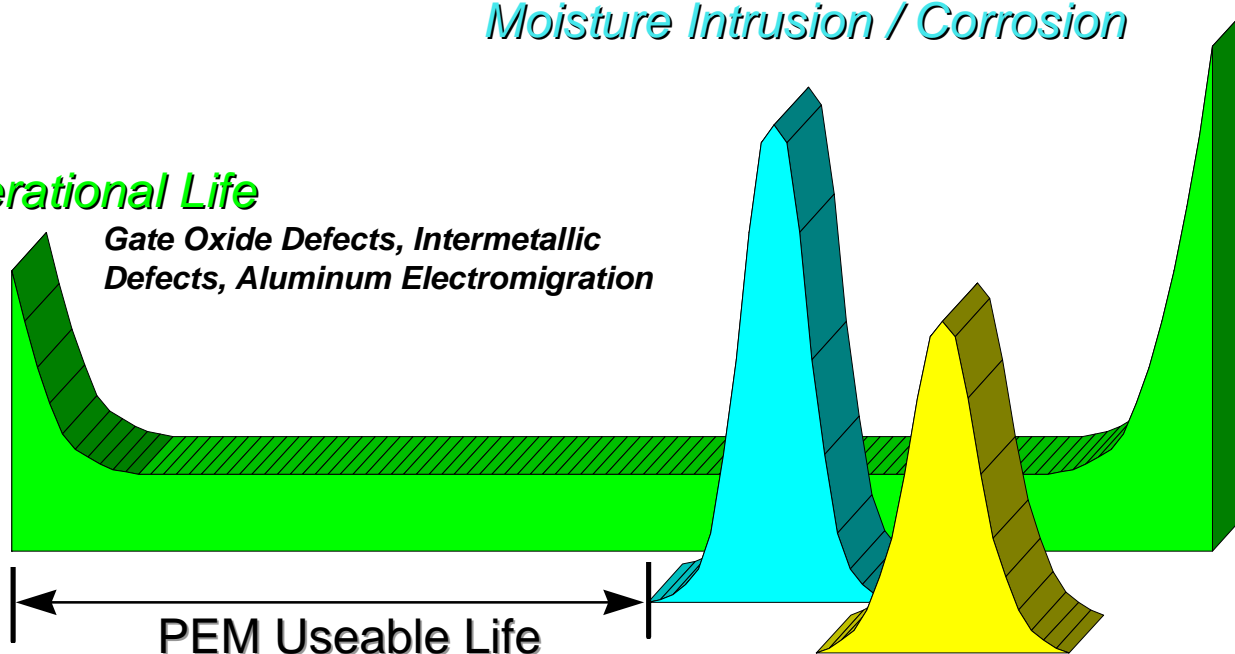


Reliability

Moisture Intrusion / Corrosion

Operational Life

Gate Oxide Defects, Intermetallic Defects, Aluminum Electromigration



Temperature Cycling Failures

*Metallization Fatigue, Wire Bond Failure
Delamination*

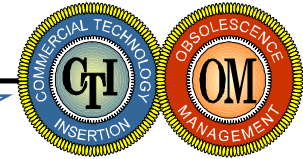


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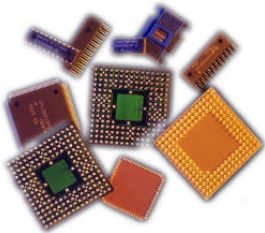
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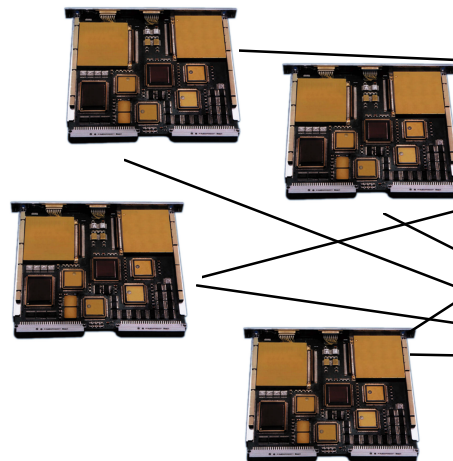
Open Architecture Design

CONFIGURATION CONTROL OF INTERFACE
FORM, FIT, FUNCTION, RELIABILITY INTERCHANGEABLE
FLEXIBLE OBSOLESCENCE RISK ALTERNATIVES
FACILITATES ENHANCED SUPPORTABILITY

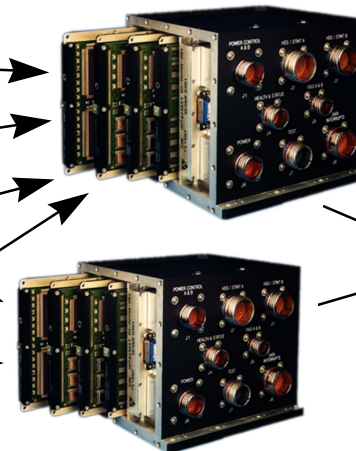
**COMPONENT
TECHNOLOGY
SELECTION POOL**



**MULTIPLE FFF
CCA DESIGNS**



**MULTIPLE FFF
LRU DESIGNS**



SYSTEM

